

...THINK...
...NEEDA COVER IDEA
FOR

FOR

NEEDA COVER IDEA

APA-TECH

WHAT?!!

100000
COURSE ... BUT WHAT?!!

YES, OF COURSE

DA DOO RON RON

PHAW!

THEY'LL
NEVER

GO FOR IT!

APRIL 1989

THE 555 TIMES

APA - TECH 64

The Amateur Press Association for General Technics

G.T. Buckfast
+ Shalmaneser

Greg Ruffa, 1004 Seventh St., S.E., Apt. 103,
Minneapolis, Minn. 55414 (612)-379-9622

table of contents

Cover Idea / Greg Ruffa	1
The 555 Times #64 / GTB-III	2
Dr. Gonzo's Bits and Pieces / Valli Hoski	1
Notes from the Vadose Zone / Doug Hosto	3
News from the Murder Capital of America / Roxanne Meida	6
Crumbcrunchers, Inc. / Susaanah West and Dave Powell	4
Transporter Topics #56 / Rod Smith	3
AstroTurks vs. the Weasel Rats / Bill Higgins	4
Cold Fusion (or how I learned to make the Bomb) / Guy Wicker	2
Has It Really Been That Long? / Donna Proni	2
Cut Down by Sharpnel from the Information Explosion / Greg Ruffa	9
	—
page count:	37

The minimum activity required is six pages per year (**not** including frankings);
up to two covers a year may be credited toward "minac."

The copy count for the APA is twenty (20).

The deadline for **APA-TECH 65**, our **Tenth Anniversary Issue**, is Thursday, 1 June 1989.

Note from the Desk of the Terminator:

Bob and Connie Trembley have been dropped; unless we hear from **Dave Levine**,
this will be his final issue.

Our Accountant asks that **Barry**, **Donna**, and **Guy W.** send some money soon.

Whilst standing in line at the Post Office, your account stood at:

\$4.17

roster

Guy Consolmagno	200 High St., Easton, Penn. 18042 (215)-252-5020
Barry Gehm	1400 E. 55th Pl., Apt. 212, Chicago, Ill. 60637 (312)-643-5828
Gabe & Audrey Helou	2691 Roundtree Dr., Troy, Mich. 48084 (313)-524-3298
Bill Higgins	853 Lorlyn Dr., Apt. 1E, West Chicago, Ill. 60185 (312)-293-1050
Valli Hoski & Joachim Schürmann	Via Gen. Guisan 21a, 6830 Chiasso SWITZERLAND
Doug Hosto [62]	Box 168, R.R. 1A, Highland, Ill. 62249 (618)-675-2350
Bonnie Jones	4757 N. Kewanee Ave., Chicago, Ill. 60630
Annette Kavanaugh	401 Fourth St., S.E., Apt. 8, Minneapolis, Minn. 55414 (612)-331-9136
Dave Levine	117 N.W. Trinity Pl., #37, Portland, Ore. 97209 (503)-224-6427
Linda Struwe-Matsushita	13616 N. 43rd St., #194, Phoenix, Ariz. 85032 (602)-953-3928
Roxanne Meida [48]	1300 Army Navy Dr., #807, Arlington, Va. 22202 (703)-521-8724
Dave Powell & Susannah West	P.O. Box 98, 501 Main St., Ripley, Ohio 45167 (513)-392-4549
Donna & Tullio Proni	530 W. Walnut St., Kalamazoo, Mich. 49007 (616)-342-4967
Greg Ruffa	1004 Seventh St., S.E., #103, Minneapolis, Minn. 55414 (612)-379-9622
Rod Smith	730 Cline St., Frankfort, Ky. 40601 (502)-227-7741
Guy Wicker	30437 Fairfax, Southfield, Mich. 48076 (313)-647-1820
Rolf Wilson	611 W. Hill, Champaign, Ill. 61820 (217)-ELYSIUM

Let me take this opportunity to welcome long-time friend and ChUSFAn Doug Hosto to the APA, former APA-TECHer Roxanne Meida back to the APA, and Linda Struwe-Matsushita back to the U.S.&A. Sorry for the delay in getting this issue put together, but it's mid-term season (No, rabbit season! Duck season!!) here in Minnesota.

I don't have a particular theme in mind, but I would like to hear from everyone next time for our Tenth Anniversary Issue (!). It doesn't have to be a long 'zine, but something special or unusual (or even nostalgic) would be fun. I will be headed to Michigan on June 11th and will be on the road for two weeks, so please don't be too late for #65.

Thanks. Enjoy the springtime!

Shal.

Dr. Gonzo's Bits and Pieces ...

submitted creatively by Valli Hoski of Via Gen. Guisan 21a, 6830 Chiasso, Switzerland and, for those of you who might be so internationally minded, there is also the answering machine at 011-39-2-652374. March 1989.

Remember that thing called a Rock Concert?

One recent evening found me indulging in something I've not done for years...going to a rock concert. Mike & the Mechanics appeared here in Milan about a week after my most recent trip to the US, where they have had a variety of hits from their latest album, "The Living Years". I had come to rather like them, so I decided to go and see them, and Joa came along for the strangeness of it.

A bit of background. Mike Rutherford was with the group Genesis, which some GTers might remember from the late 70s and early 80s. Well, he has written much of the material for this new endeavour called Mike & the Mechanics. Odds are that if you liked Genesis, you'll probably like Mike & the Mechanics as well. And the audience seemed to reflect this probable interest in Genesis, as most of them were the same age as Joa and I.

So what about their music. I've only recently come into extended contact with "new" stuff in rockn'roll. Newage stuff put me out, with its tinkling monotony and I really don't listen to the stations in Italy that play the latest top 10. (Do any of us listen to the top 40 stations anymore?) But through friends I've become reacquainted with some of the newer stuff out today, in addition to Bruce Springsteen and George Michael (whom I've always liked). What fascinates me most about the newer music is the sound--how do they do it? During the concert, I found myself in another one of those "how does it work" situations, trying to figure exactly who was making what sound from where. Now this isn't exactly easy with all the sound-mixing coming from the speakers, eh? Much like the heavy electric basis for the 60s rockn'roll was influenced not only by the new "tonal"/rhythm used by the popular groups, like the Beatles, but also the technology (i.e. electric guitars that also could screech and whine)--remember Jimi Hendrix? Anyway, I'm become fascinated by how they are producing their sounds today ... what is real vs. what is synthesized? Can it be differentiated? What do you call the guy who plays the synthesizer vs. the guy who plays the keyboards? They might not be one and the same. In Mike & the Mechanics, Adrian Lee definitely plays the synthesizer with Paul Carrack providing the keyboards; their instruments might look similar, but their focus in playing is very definitely synthesizer or keyboards.

Anyway, let me ask this timely questions: what does anyone out there think of the new stuff by 1. Mike & the Mechanics, 2. George Michael or Tracy Chapman's most recent album?

And this new technology involving electronics in most instruments. Now there are synthesized wind instruments (i.e. flute), which are a fascinating concept to me because this is computer processing which depends on wind velocity and pressure for input. Quite literally pulling music from the air ...

NOTES FROM THE VADOSE ZONE

My name is Doug Hosto. For those of you who do not know me, I am 6'4" tall and weigh 320 lbs. I have blue eyes, dark blonde hair, and a mustache. I was born and still live in Highland Illinois (a small town about 35 miles east of St.Louis). I attended the University of Illinois and recieved a B.S. degree in geology in 1981. While there I was a member of Chusfa (Champaign Urbana Science Fiction Association) . I presently work for Exploration Logging Inc in Houston Texas. I work 12 hours on and 12 hours off shifts 7 days a week for 2 weeks and then I get a week off, or so my employees manual says. In actuality I frequently am gone for as many as 4 or 5 weeks at a time with no accrued time off. So I am often away from home for long periods of time. I still live at with my parents so mail and phone messages can still be forewarded to me wherever I am.

Exploration Logging (Exlog) provides mud logging services to the oil and gas drilling industry. Mud logging entail going to the site where an oil or gas well is being drilled and collecting periodic samples of the rock cuttings that are drilled, monitoring the drilling mud for gas, and keeping a drafted log of them along with a plot of the drilling rate. By comparing the drill rate curve with the type of rocks drilled and the amount of gas liberated while drilling them a preliminary determination can be made as to the type and quality of oil or gas reservoirs and sources that we encounter while drilling. You may be wondering why if I am working for company in Texas that I am still living in Illinois. It is because I spend the vast majority of my time in the field. I may get to the office only about once ever other month and then only to drop off completed logs or pickup supplies. In the last 12 months I have worked jobs in Pennsylvania, Virginia, Michigan, Texas, and Louisiana in addition to jobs in the Gulf of Mexico. At the well site I have a small laboratory with a sink to wash the drilling mud from my samples, a microscope to identify the type of rocks in my sample and to look for porosity in the rocks , an ultraviolet box to look for the fluorescence that oil can show under ultraviolet light, and a desk and drafting supplies to do the actual drafting. As a matter of fact, I am writing this on an offshore mobile drilling rig in the Gulf of Mexico. To be precise, in South Timbalier Block 131. The Interior Department has divided the waters of the Outer Continental Shelf into many planning areas for the purpose of leasing them for oil and gas drilling. Each of these areas are divided into blocks, each 3 miles by 3 miles. One block is the smallest area that can be bid on in a lease sale. So, I am in the 131st block of the South Timbalier planning area. These areas are often named after local coastal or subsurface features i.e. Vermillion Bay or Green Canyon. An offshore lease is good for 5-10 years, depending

on the water depth (the deeper the water the longer the lease). the owner of the lease has the exclusive right to drill on that lease for that amount of time. He must drill at least one well on that lease in that time or the lease reverts back to the Government. After a well is drilled the lease owner has additional time to complete production work and to produce oil or gas from the lease . The lease owner must pay the Federal and State governments a royalty on ever barrel of oil produced on the lease.

Exlog already uses computers in it GEMDAS (Geological and Engineering Monitoring and Data Aquisition System) system which does some real time hydraulic and pressure calculations to aid in efficient drilling. I am writing this on the GEMDAS operators computer while we are running casing. It is an ancient Hewlett Packard HP 1000 M-series Computer. They don't make them anymore and they don't even make the parts for them anymore. There is only one place, somewhere in California, will repair them using specially build parts. Exlog is beginning to computerize it mud logging services using IBM-AT and IBM-AT clones and a plotter to produce a computerized mud log. Instead of hand drafting my logs the data is entered into the computer and it drafts the logs. I will soon be going to a three day school to learn how to use the new system. The next job that I am scheduled to go to will be using the new system. Exlog is planning to eventually replace all its computers with PCs.

Things started out on this job on the wrong foot. Exlog sent out two GEMDAS operators and two sample catchers to rig up the unit and to catch top hole samples. The mud loggers (me) were to come out later after we set the surface casing. But, no one told this to the person in the office who was on call for the weekend. When I called him to find out what day we where going out to the rig, he told me to leave immediately. When I arrived on the rig no one was expecting me and since there were many extra people out there getting things ready to begin drilling there was no place for me to sleep on the rig . So, one of the sample catcher was sent in because I am on salary and would be paid regardless of if I worked or not and he was on contract and is only paid a day rate when he worked. So, for 5 days I was playing sample catcher until we where ready to begin logging.

Just as I was finishing this, I heard about an explosion and fire on an offshore production platform in the Gulf of Mexico. I want to assure people that it was not my drilling rig that was envoled. Apparently they were making repairs to an oil pipeline when there was an explosion and fire that spread to a second platform. Seven people are missing and presumed dead. You can imagine the talk that this has caused around here after the Piper A explosion in the North Sea earlier in the year.

Mailing Comments on APA Tech 63

Greg was kind enough to send me a copy of APA Tech 63 for me to read.

Joachim: I was reading in a recent issue of Time Magazine (March 20, 1989 page 25) that there is increasing concern in the US military that computer viruses could be used by an enemy in time of war to disrupt command and control systems. Such Viruses could be implanted earlier and when hostilities began could be triggered to either erase important information, tie up communication lines, or misdirect troops or supplies at a critical time.

Greg: I noticed in the article about the proposed movie about the beginning of the Atomic Age that they have hired the former chief engineer at Los Alamos "to guarantee the authenticity of the bombs". I am somewhat nervous about any Hollywood director with an authentic atom bomb.

News From The Murder Capital of America

Yes, I thought I had gotten away by moving out of the Detroit area, but No! It decided to move, too. A contribution to ApaTech by Roxanne Meida, 1300 Army Navy Dr. #807, Arlington, VA 22202 (703) 521-8724

I had written a contribution featuring full mailing comments on ApaTech 63, but the entire disk was trashed. I didn't get any cute comments like "Now Trashing Disk;" I just inserted it like I had half an hour previously, and the computer came back with "This disk is unreadable. Format it? Ok." This is not what I wanted to hear. I turned the disk over to Bruce, who did what he could, but it was hopeless. So you'll get what you get. **News flash!** Bruce did manage to salvage the old file. This contribution is now a combination of what I wrote Before and After The Crash.

In the eighteen months since I last contributed to ApaTech (Issue #52, near as I can tell), a lot has happened.

I took two courses at Western Michigan University, one in Shakespeare and the other in Article Writing. I may put some of those articles in this zine eventually.

I met Bruce Schneier at Minicon in 1987. Bruce lived in Virginia (well, he still does), having come from Brooklyn via Rochester, NY. We started dating long distance, and visiting back and forth when we could.

Bruce works as a program manager for the Department of the Navy, in communications. He travels to California, Hawaii, Western Europe, Japan and Korea regularly in the course of his work. he has two degrees: a BS in Physics and an MS in Computer Science. We share many common interests, such as science fiction and history.

In May 1988, I accompanied him on a trip to Europe. We spent ten days in Germany, Luxembourg, Belgium and France. We primarily toured castles. Most European castles were begun between 1000 and 1400 A.D., so many are in ruins now. Some are being rebuilt as hotels and tourist attractions. We stayed overnight at Burg Schöenberg, located on the bluff above Oberwesel on the Rhine (which was a surprise present from Bruce). Our room had been a guardhouse in the old days. We visited the Casements in Luxembourg, Haut-Kœnigsburg in Alsace, Spontin castle and the Citadel of Dinant in Belgium, along with many lesser castles and *chateaux*. We motored along the *Route du Vin* in Alsace and the *Weinstrasse* along the German Mosel river. We found some very pleasant vintages this way. We visited the memorial to the Battle of the Bulge, located near Bastogne, and a bunker from the Maginot Line. This really raised my awareness of World War II. I hadn't realized how many people really died there. While 350,000 Americans were killed, there were also several million Europeans. Imagine the total populations of New York City, Chicago and Los Angeles. Almost every town had a fairly large cemetery from that era. My mind was boggled. All in all, I enjoyed the trip immensely.

In June I moved to Virginia to be with Bruce. I originally intended to go back to college here, but inflated salary offers quickly changed my mind. I worked initially for an architectural firm. After three months we mutually decided I was over-qualified for that position, and I left. I am now employed at the CPA firms of Thomas Havey & Co., where I am the Small Business Bookkeeper. I create financial statements for several firms from their check registers and deposit logs, which are then used to prepare their tax returns.

Washington, DC is a good city to live in. The subway system is clean, efficient and

much nicer than New York's. We live 3/4 mile from the subway, and it's only a ten minute ride to the Smithsonian and the Mall. I take the "Metro" to work every day.

In September, I again went with Bruce on a business trip: this time to Hawaii. We spent Labor Day weekend on Kauai, and the rest of the week on Oahu. I came home then, but Bruce worked two more weeks. While on Kauai, we took a very physical boat ride along the Na Pali coast, where we saw some spinner dolphins playing in the surf churned up by Typhoon Uleki. We hiked along Waimea canyon, the "Grand Canyon of the Pacific." It is half a mile deep, several miles long, and about as big as a canyon can get on a tropical island. We went swimming in a pool below a waterfall (you've seen it in the brochures; the water is Lake-Superior-style COLD!). We went snorkeling in Hanauma Bay (off Oahu), which is filled with a coral reef and zillions of fish. Fishing is not allowed, but feeding the fish bread and frozen peas is encouraged. Imagine swimming in the world's largest outdoor aquarium; it was great. I visited the Arizona memorial at Pearl Harbor, the Bishop museum of Hawaiian history, and got thoroughly drenched trying to visit the Dole Pineapple Plantation. It was another wonderful trip.

For Thanksgiving we visited Bruce's parents in Brooklyn. We watched football and ate turkey for dinner (how traditional can you get?). On Saturday, we went to the Mysterious Bookshop on 56th Street, which still specializes in mysteries and is better than ever. Then we went to a play, *Tamara*, which was held in an armory on the Upper East side. It takes place in ten rooms, and it is necessary to chase the actors from room to room to follow the plot. We benefitted from coming in a group; by splitting up, it was possible to piece together the intrigues by sharing notes at intermission and after the play. They fed us a gourmet French dinner during intermission, with champagne before the play and dessert after, and the actors came around to fill in gaps in the plot. It was expensive, but tons of fun.

For Christmas we went to my sister Lori's in Virginia Beach. She has two kids: Vickie who was two-almost-three, and Daniel who was 15 months. Once they figured out the concept of wrapped packages, they had a great time. Bruce also enjoyed it; he had mixed emotions about the lack of religion in our celebration, but got over it. Since his family is Jewish, this was his first Close Encounter with Christmas. The weather was extremely non-Christmas-like; we had a high in the 70s, and it was clear and sunny. So after dinner (cooked by the men in the family) we went to the park with the kids, and didn't even need a jacket. Appalling, if you ask me.

I didn't attend Ishercon this year. Instead I went with Bruce to his semi-annual D & D game. This game has been going on since before Bruce went to college. He joined somewhere around 1981. It used to be every week; since the players are now all over North America in pursuits of various vocations, it's now down to actually playing only twice a year. They have phone conversations at least once a week, though.

I didn't enjoy it much, and will be attending Ishercon from now on. The D & D players were literally uninterested in anything else all weekend. They spent about 20 hours a day playing, and didn't go for 24 solely because the DM refused. I do blame the DM for not ending the game at the times established each day, which made it impossible to do anything with the players on schedule. The non-players were pretty much okay the first day; we sat and watched football for nine hours straight. The second day was going okay until the others decided to go get a tank of nitrous oxide. This left three of us who were neither players nor inhalers confined to the "quiet" room. The third day there was still some nitrous left in the tank; they waited until 10 am to open it. If there had been a way home that didn't involve changing transportation modes in Penn Station, NY I would have left right then. It was a bad experience; Bruce is lucky I didn't get a chance to judge

him by this group of his associates. Maybe that's why it took so long to meet them....

Work is going amazingly smoothly during Tax Season, traditionally the busiest time of year at a CPA firm. I am staying caught up, and impressing everyone by just staying even. I guess the last person was only caught up for two weeks sometime in August, and then she went on vacation. I will have no trouble taking time off.

Bruce went to Japan during February, but I couldn't go with him because of the work crunch. He stayed a few extra days, and was one of the quarter million who stood in the rain to watch the Emperor's hearse go by and otherwise observe the funeral.

It was nice seeing so many of the GT'ers at Capricorn in February. Living in DC keeps one out of the general social circle of Chicago pretty effectively. If anyone comes by this way, I *expect* them to stop by and say "hi," at the very least. I know a couple of good, reasonably-priced restaurants, and some very good restaurants if your budget can take it. We are centrally located, being just across the freeway (I-395) from the Pentagon, and about a mile due west of Crystal City. It's 3/4 mile to the subway, from which it's three stops on the Yellow line to the Air and Space Museum, or two in the other direction to National Airport. We can accommodate three guests easily, and others if they don't mind sleeping on the floor.

We will be going to England in May. Bruce is going to brief people at a bunch of bases in Europe on the status of his program, and will be gone from May 1 until we get back. I will join him in England on the 12th and we'll spend a week wandering around doing whatever seems appropriate. I have looked at a few travel guides to England, and conclude that I cannot possibly see everything in a week; maybe in three months, but I doubt even that. We will concentrate on southern England on this trip, leaving Scotland, Wales, Ireland and the northern shires of England to the next trip.

We may spend a day or two around Stonehenge and at Avebury, which is another circle of stones, except the village of Avebury is in the middle of the circle. A book we got from the library, *A Guide to Ancient Sites in Britain*, considers any site as recent as Roman times (i.e. less than 2000 years old) to be too contemporary to be included. It is devoted to stone circles, standing stones, mounds and ruins. We are going to try to see a few of the places mentioned there.

Comments on ApaTech #63:

Cover: Ha ha./Why is there no "63" anywhere on this?

555 Times: I count 16 active members. A copy count of 20 gives only 4 extra issues for spec copies. How will we get the membership back up at this rate?

Joachim Schürman: Who's from Druben?//I'm sorry to hear about your difficulty with the virus, but I'm glad you were able to "cure" your system.

Dave Powell/Susannah West: Thank you for the information on micropress. They sound like fiction-oriented fanzines to some extent, but are probably better produced.

Guy Consolmagno: Good luck on the continuing Jesuit training. Will you still teach at Easton after you finish?//The fanfic is quite good, but too tame for *Playboy*, and probably too risqué for anything else.

Re chaos: the only exposure I have had was the book, *Eudaemonic Pie*, which was mostly about the development of a system for predicting roulette, but whose theory led to the concepts of order within seeming chaos. Marty Franz lent it to me two years ago. It

made quite a bit of sense to me, which is saying a lot since I have had repeated difficulty with "higher" math. (See comment to Annette, below.) I thought they were saying that a system was chaotic when it appeared completely random when graphed in n dimensions, but resolved into a predictable (i.e. non-random) pattern when graphed in $n+x$ dimensions. Admittedly, this was two years ago, and I don't have the book in front of me. Am I wildly off track?

I have recently read both *The Great Depression of 1990* and *How to Survive the Great Depression of 1990* by Dr. Ravi Batra. He is using seeming chaotic equations to predict with alarming precision the economic atmosphere of today. If he's right (and I for one hope he isn't), we're in big trouble. I bring this in because it seems to fit between your discussions of chaos and of predicting the future. He draws startling parallels between actions of the market in the 1920s and the 1980s, and it really doesn't help any that the weather is co-operating by creating the worst drought in the Midwest since (guess when?) the 1930s. I hesitate to quote from either book directly; I don't think I can adequately rephrase either. They are good books, apparently well researched, and frightening to boot. I recommend them.

Re behaviors that should not be illegal, but not officially condoned either: use of alcohol already fits this category. You can purchase alcohol, but you better not show up drunk to work. Smoking is beginning to fall into this category. I think we should put all the things you mention into that category. (Certainly in many parts of the community this is already the case.) Then we should tax them to the max, and use the resulting revenue to support education against these very things. We could license dealers the same way we license alcohol, tobacco and firearms. Legitimate dealers would help to nail the illegal dealers. If nothing else, it would clear out a lot of the jails, and at the same time dealing would be less attractive to the juvenile entrepreneur.

Rod Smith: Re nudity: Fans are less inhibited about nudity than American Midwesterners. Defining where the "Midwest" is can be a problem. Certainly Californians are less inhibited about nudity than most Midwestern fans—they will go nude in public (on beaches), while I have never seen anyone totally nude at a convention who wasn't in the pool or just getting out of a shower. Even they are prudes compared to Europeans. When we were in Belgium last May, one Saturday it was very hot (in the 80s). We stopped near Spontin castle and had a picnic lunch in the park there. Some kids, about 10 - 13 years old, were playing soccer nearby. They were all wearing shorts only, no shirts. Eventually I noticed that at least a third were female. This really adjusted my reality. Upon my return, I told this joke on myself to a woman from Norway. She told of her grandmother being stupefied at the idea of bathing suits. What was the point of swimming, if you were required to wear clothing? Why not have to wear clothes in the shower, too? The difference is all in how you are raised, and whether you are taught to be proud, indifferent or ashamed of your body.

I would have to have a very strong reason to move to Kentucky. I have rarely had a pleasant encounter with a Kentucky male. They tend to assume that because I am female (or something; female seems most obvious), I can't a) pump my own gas; b) carry my own luggage; or c) find my own way to where I'm going. I must have assistance. Strange; I don't have any trouble anywhere else with those things. I can just imagine what might happen if I were to try applying for a job. The scenery is nice, but the attitudes are absurd.

Re poison ivy: Before you go out to clear it out, spread petroleum jelly (Vaseline) on your hands, arms and face. (Ankles are probably a good idea too.) Spread it on *thick*.

Then put on your gloves; it will feel disgusting, but it's better than the alternative. When you get done, carefully remove the gloves, or have someone else do it. Wipe the Vaseline off with paper towel, and throw them away. Now carefully wash your hands, etc., and your clothing.

I once had a cat who went out to play in some poison ivy, then came home and cuddled up with me. I had poison ivy on my face, hands and arms. I couldn't go anywhere for a week; my eyes were swollen shut for a day. The cat had to have a bath, which added scratches to the damage, but I didn't feel nearly as bad about forcing him into the tub of water as I would have another day.. After this, the doctor told me the trick with petroleum jelly to help in my riddance of the ivy.

Valli Hoski: We'd come visit the next time we were in Germany, if it weren't so far across Switzerland from Frankfurt to Milan. European countries may be the size of (Western) American States, but 250 miles is still a five hour drive, especially across mountains.//Re European wildlife: all we saw in some extensive woods-wandering in Alsace were snails and slugs. *B/G* snails and slugs (snails 2 inches long; slugs 8 inches long, and an inch thick), but still. No squirrels, chipmunks, raccoon, or anything close to that size. Not even a rabbit. Someone must have been hungry....

Annette Kavanaugh: Do you think the problems in the math departments are there because of the structure, or because of the personnel, or some of each? And now that you've discerned the problem, what can we do about it? Should GT collectively take over some college and remake it in our own image? With three at U of Minn. now, should we go for that, or try for something smaller?

It is now my recommendation that anyone who actually needs assistance in learning should avoid large four-year colleges like the plague until at least their junior year. At U of Mich. and Michigan Tech, the first two years were for weeding. Anyone left got a good education (it still took more than five years to graduate, though). At U of Michigan in engineering, you are taught by video and undergrad TA until you achieve sophomore status; not even grad students are expected to waste any time on you. That was true in '83; it may have changed, but I doubt it.

My best collegiate experience to date was at Suomi College, and it was viewed by the community (with Michigan Tech just across the Portage) as a remedial college for those who weren't ready for the real world of Tech. I finally passed Calculus there; I had a teacher who could get me to believe in it. The difference was that all the instructors (competent or not) showed they cared and really wanted to help the students. The atmosphere was supportive rather than competitive.

There have to be some colleges that concentrate on undergraduate education rather than on graduate research. Unfortunately, that is not where the prestige or the money is. I have no idea how to change this, because it is economic theory at work. We must somehow re-introduce the idea that doing research *for pay* at an institute of higher learning is socially unacceptable, yet at the same time raise the prestige and salary of the educators. Good luck.

We also need to get an "Old Girl" network going. We, as women, need to sponsor and tutor each other. This goes on inside fraternities; why not inside sororities? And those of both sexes who get into positions of power need to do their best to change the system.

I have seen an "Old Boy" network in place at Thomas Havey: an amazing percentage of the men went to St. John's High School, and then on to Catholic University (both located in DC). St. John's is a military high school run by the Catholic church; I haven't determined if women go there or not. Several of the female CPAs went to Catholic University also. This gives all of them a big background of shared experience to build on. I have noticed that when the group goes out for a drink after work (a regular Friday night event), they go on talking about work, but eventually branch out into those shared

experiences. This leaves those of us who didn't do that just sort of standing there; we're not "in the club."

Well, the other comments were better (I think), but this will have to do.

Greg Ruffa: Re ct Gabe & Audrey: Have you tried the Tony Hillerman mysteries yet? They're all fairly new (within the last fifteen years or so) and are centered on the Native Americans of Arizona and New Mexico. Very good writing, and you get to learn about an alien American culture at the same time. Dick Francis also writes good mysteries, especially if you like horses.

"I tend to play this game the other way, though: I think of people from the past I'd like to bring forward to show them the ramifications of their ideas and actions." There are those who say that exactly this sort of event prompted Saint John to write *Revelations*. That was no angel; just a 21st Century time traveller, out for some fun, and poor Saint John got caught in the middle. (And if you believe that, have I got a deal on some land for you! But it's fun to conjecture about.)

CRUMBCRUNCHERS, INC.

Dave Powell and Susannah West

P.O. Box 98

Ripley, OH 45167

March 25, 1989

Somehow, I don't feel particularly creative this morning; I think most of what creativity I have remaining after this weird winter has gone into a magazine article I'm writing for *Parents* magazine. This article is about getting early eye exams for your baby, something one of my (several) sisters-in-law, who's an optometrist, believes in strongly. She works for Lenscrafters in Columbus, and Lenscrafters was for awhile offering "well baby eye exams." She did a few TV and radio interviews about the Lenscrafters program, and was very enthusiastic about it. Together we decided that we might parlay it into a few magazine articles. (Unfortunately, Lenscrafters, at least in Columbus, has discontinued the program, because there wasn't enough interest.)

Other than that, I've been nursing people through colds, croup and flu, reading reams of international finance and international economics for Dave's classes, and trying to get the magazine together. We've been taking all your advice to heart - those of you who filled out our survey - and are trying to incorporate your suggestions. Dave's school is sort of horning in, though - it seems that one crisis at a time is all I can handle! (Those of you who are convinced that this is only a pipe dream, or wonder why we can't get our act together, we thank you for your patience and just say, "Wait and see!")

Crisis of the moment - Dave's independent research paper. It was due today (!) and at this time last week it was just barely a-borning. He managed to get a five-day extension, fortunately, and I *think* it's near completion. (This doesn't include table of contents, footnotes or bibliography, or proofreading, of course - it looks like that will be my job!) He says the prof is very particular about spelling, grammar, punctuation, etc., plus proper bibliographic form, so I'd better brush up on my Turabian (I generally use *The Chicago Manual of Style* myself, though it does seem that all these style sheets are practically identical).

Plus we have to figure out how to celebrate Easter in a semi-Christian household. I'm of course submerged in the season, because I've had several church services to play for. Now, however, I only have Easter itself to worry about. I can't tell you how weird this makes me feel. My sister-in-law Linda came down to visit us in December, and came to church with me. She attends a rather fundamentalist church herself, and even she agreed that these Methodists here in Ripley are definitely *conservative*. Urban Methodists, at least in my grade school and junior high remembrance, are fairly liberal, but not these folks! Well, I knew that this area was "Bible Belt" when I moved here, didn't I? For Marlene, the season is a time to decorate Ukrainian Easter eggs and get excited over all the special decorations and foods that are appearing in the stores right now. (She pines after those marshmallow chicks and rabbits, which I personally think taste ghastly! We made a concession and bought some jelly beans. She remembers them from last year, and is very fond of them.)

Kindergarten registration is in two weeks! I discovered to my chagrin that my procrastination in not

getting Marlene her social security number has had unfortunate consequences. I'd filled out a form and intended to apply for it last October, and of course it got set aside and nothing done about it. Now I doubt that there's time to apply for a number and get the documents back before April 6. (You need to submit the birth certificate and a proof of identification, which I'm not sure what is for a four-year old - immunization record? Library card? Savings account book? Originals only, please, and when I try to call the Social Security offices in Cincinnati, all I ever get is a recorded message saying, "All lines are busy. Please call back later." Since these are of course toll calls, you can imagine this gets irksome. There is a local number listed in the phone book for Social Security, but when I called it, I discovered that it had absolutely NOTHING to do with it at all!) However, I saw the kindergarten teacher on the street yesterday, and she reassured me that it wasn't absolutely essential that MR have a social security number for registration, though I should get it as soon as possible. I must get her immunization record updated, too - she has had all her shots, of course, but they usually forgot to fill out the card at the doctor's office. (Correction - she needs a DPT booster before school starts in August.)

I meant to mention the popularity of the Teenage Mutant Ninja Turtles last time around! I saw several Turtle artifacts at Ishercon, and we have some here too! Dave got MR one of the "action figures" for her birthday last year (though of course you realize that it was a toy for himself!). It's Raphael the Turtle, but Marlene insists that the name is Raffone, and that Raffone is a "she." (Almost all her toys are female. The only male toy that I can tell is Lyle the Teddy Bear, who simply can't be a girl, because he's been male for over thirty years - he was mine when I was little. He's also married to Poppy the Teddy Bear. Lyle and Poppy are expecting a baby bear, so you see that he *must* be a virile male!) She is a fan of the Turtle show, too (that is, when she manages to get up at 8 AM Saturday morning!). She calls it the Teenage Newton Ninjing Turtles.

Dave was quite taken by *The Colony* game which he played at Ishercon. So much so that he demanded that I call Programs Plus and order a copy for ourselves. As soon as we received it, he spent several hours working through the entire game (actually, I suppose it may have been fifteen hours all told - he'd play it for three or four hours every night) and not working on his paper. (The same thing happened with *Captain Magneto*, which compared to *The Colony* is a simple game.)

Another game which I purchased at the same time was *Reader Rabbit* - a learning to read game for the 4-6 age group. It has four little games to play, and when you get the right answer, a little rabbit wearing overalls comes onscreen and dances a little jig. MacWorld gave it a very high rating in its review. The Ripley library has several Apple II's and also a copy of the Apple II version of *Reader Rabbit*, so we tried to play it the other day - disaster! It's hardly the same game at all, and infinitely less fun. Another game which Programs Plus calls "educational software" is "Where in the World is Carmen Sandiego?" They have it at the library, so I may try to play it today, and if I like it, we may order the Mac version - I just hope the two versions bear at least a slight resemblance! I played "Where in the USA is Carmen Sandiego?" yesterday, and managed to catch up with the crooks twice, but wasn't able to arrest them because I didn't have a warrant! (I have yet to figure out how I get a warrant.)

Well, I see the page end approaching, so I'll get on with mailing comments! Spring does seem to have sprung around here - at least I hope so, because our furnace is bust and the repair person is writing a 30-

page research paper!

JOA: (This comment is also addressed to all of you who had statements to make about the importance of being bilingual.) Our friend Albert, who had the English/Slovak dilemma, is now a freshman at the University of North Carolina, has, according to his mother, become a strong proponent of bilingualism. He's also told her that he thinks it's important that his little sister Anna (who'll be 4 in July) learn not only how to speak Slovak, but also how to read and write it. (He doesn't read and write himself, and I think wishes he could.)

Guy C.: I'm interested to know your feelings about interfaith marriages! I recall seeing a TV report on one of these rather sensationalist shows (*The Reporters*, I think it was) about a Jewish-Catholic marriage in which the wife had converted to Judaism. Both she and her husband agreed that their two girls would be raised Jewish. However, she discovered after they divorced that her Catholic roots were just too strong to deny, and she started going to church and occasionally taking the girls with her. The ex-husband, when he learned of this, was very upset, and obtained a court order which would prevent his ex-wife, even though she had custody, from taking the girls to church, or even talking about religion in the home. (My own personal solution to this dilemma would be that they should all become Unitarians! However, though I know a few Jewish families who attend Unitarian churches, it would be a rare Catholic, it seems to me, who could ever receive the spiritual fulfillment he or she sought from a Unitarian church.)

Here in Ripley, what church you go to is very important, and serves to some extent to identify you. My own identity is somewhat nebulous - "Susannah is a...well, she's the organist at the Methodist Church." There are two black churches, also, and the white and black churches *don't* interact. The minister from the black Baptist church spoke at a service at the Methodist church this past week, and the only blacks in the audience were his wife and her parents. Even though the white and black Methodist churches call themselves "sister churches" they are never involved in what you might call joint events.

A hopeful development, however, is that the Catholic priest spoke at last year's Community Thanksgiving service which was held at the Methodist church. (And Father Brian is a *good* speaker. Almost I'd go to St. Michael's occasionally just to hear him speak!) Possibly Ripley is on the way to becoming more ecumenical?

ROD: How *are* your cats? Our mouse infestation has led at least me to consider a cat very seriously. I've been having a battle with one very bold mouse who comes out in the daytime and gets in the sink. He got trapped one time inside a frying pan, and I thought I had him, but alas, he got away. I've caught several recently, but I know there are lots more - I can hear them scrabbling in the walls behind the piano every evening.

DR. GEHM: You got me! And caught me in a severe error at that! (Sometimes my brain functions at one-quarter capacity.) The Pamper Pole at Camp Joy requires you to jump out into empty space (thirty or forty feet up in the air), catch hold of a trapeze and swing across a ravine. Of course everyone is roped and there are nets, so nobody can get hurt, but according to Dave, the Pamper Pole was very intimidating. (It's hard

for me to visualize some of these things - the class videotaped everything, though, and he's promised that I'll have a chance to see the tape someday.)

GREG: I was pleased to read your comments about the Martin Beck books! About ten years ago I roomed with a college friend who had spent a year and a half as an exchange student in Sweden. She was a real Martin Beck fanatic, and together we read all the Martin Beck books we could find in the Columbus Public Library. Just one question - *what* is the author's name?! Valli and I were discussing Martin Beck while at Ishercon, and I couldn't for the life of me remember it. Talk about embarrassing!

What I really enjoy about the books is the interplay between Martin Beck and his partner (whose name is Lennart something or other, if I remember right). These are real guys - Martin Beck smokes too many cigarettes, appears to have an ulcer, doesn't get on too well with his wife, etc. An interesting thing I noted while reading the books - each book had a different translator. So certain idiosyncratic characteristics of the partners varied slightly from book to book. I've always thought it would be very interesting to be able to read the books in Swedish. (This reminds me of James Thurber's comment to a woman who said that she preferred to read his work in French translation, because it was so much better in French than in English: "Ah yes, madam," he said. "My work suffers in the original.")

We visited the Science Museum in St. Paul back in 1984. (We were in St. Paul for a publisher's conference.) I liked it a lot, but we only had about half an hour to "do" the museum before closing time. At the time they had a very impressive exhibit on wolves, which feature lots of mounted wolves in typical poses, a wolf's den you could go in (and hear the whiny, yipping noises made by the pups, etc.) and lots of wolf vocalizations. What I liked best, though, was that big metal lizard at the museum entrance!

Oh yes, Marlene climbed Mary's Peak with us! So did my cousin's son Michael, who is about ten years old. I got a great picture of Marlene and Michael walking down the road, hand in hand, and another of MR up to her nose in alpine meadow flowers. She really basked in all these cousins - though she actually has several of her own, she sees them infrequently because they live so far away. And three of these cousins we never see anymore since the parents got divorced. (I send Christmas and birthday presents and cards to them, and can only assume that they've been received, because they're not returned! They may have decided that it's best to cut off all communications with the family, but it's hard to find out, since they won't speak to us!)

Marlene's most recent profound comment was that thunder and rain are caused by "cracks in deep outer space." (Her explanation of lightning is much simpler - the sun is shining a flashlight through the windows.) Though her main ambition when she grows up is "to be a mommy," she has also told us that she'll "go into space someday." She was also interested in the photos in the current Space Camp catalog. (What I was interested in was the Space Camp for professional educators! I'm not sure I qualify as a professional educator, but I'd sure like to attend one of those sessions, which are, by the way, worth three graduate credit hours from the University of Alabama at Huntsville.)

Well, it's time to start proof-reading Dave's paper, so I'll say farewell. Be well and happy.

Suzanne

TRANSPORTER
TOPICS

Rodford E. Smith
730 Cline St.
Frankfort, KY 40601
(502) 227-7741

Number 56

ONCE IN A DECADE

Well, I went and did it. I bought a new car. It is a navy-blue Mustang LX five-litre (302 cu. in.) hatchback. I kept my last car (another Mustang) for nine years, so no one can accuse me of being a wastrel. Blue (the car's name) handles well, although it's turning radius is longer than the Silver's (guess what color it was!) and the vision to the rear on each side is less, because of the hatch. Still, it is a good design, and gets about the same mileage with over twice the horsepower. I am impressed with the progress made in engine design over the past few years. Today's motive units put out more power than those of the late seventies through early eighties while getting better mileage! They are also more reliable, since they use the same technology at a more mature stage. Unfortunately, I recently learned that the internal combustion gasoline engine is about as efficient as it can reasonably get. To do better, we will have to use different fuels.

Yes, I needed a new car. And I got a dandy. Unfortunately, I am now making car payments which are higher than my house payments!

SANCTUARY

I finally received the first check from Iron Crown Enterprises for my game manual. They were supposed to send it to me in January. I finally had to call and "gently" remind them of the contract. While taking with the, I learned that the artwork and layout are finished and the book is ready to be sent to the printer. It is supposed to be back April 16, at which time I will receive another check, and in the stores sometime in June. Hopefully. My book, and one other to be brought out at the same time, are the last using the current rule system. A major revision of the rules is due this summer.

A WRITER'S HORROR STORY

While we waited for the loan officer to confirm my loan, I sat talking with the young lady who was selling me the car. I

happened to mention that I wrote some, and had a book coming out soon. "Oh," she said, with sudden enthusiasm, "one of our dealers just got a \$100,000 advance for a book he is writing!"

Turns out the guy used to work for Jim Baker, and has sold an unwritten kiss-n-tell book to Doubleday (I think). Talk about smiling on the outside and crying on the inside!

THIS AND THAT

I have been getting my property ready for Summer. I pruned my apple trees a couple of weeks ago, and just last week I harvested my compost heap and spread it on the garden and the flower beds, with last year's leaves on top. This mulch will all be tilled under in a few days, as soon as the ground is dry enough. Then comes the planting.

I have my hotel reservations for Worldcon and maybe my airplane reservations. There will be six of us in a "family" suite, sharing the costs. Originally, I was supposed to provide transportation for myself and two others in my new car. When they found out that the trip would be over twelve hours, though, my friends decided to fly. Since that is cheaper than driving alone, I am flying also.

F/S 1 has come and gone, and it was a disaster. The manager of the student organization in charge made such a mess of things that the president of our F/SF club officially withdrew the club's participation. The student leader was doing such things as providing conflicting information about the number of people who had pre-registered and refusing to attend scheduled meetings. A week before the con he got stingy, and cancelled some of the invited (and advertised) guests. He wanted to put the guests two to a room, but was talked out of it. This guy even managed to break the shuttle bus. Some people are talking about filing lawsuits. By the way, we were never able to get hold of Jittlov.

ConCave, on the other hand, was marvelous, as usual. I finally talked some of my gaming buddies from Lexington into going. When they got back they complained that there wasn't enough to do! I tried explaining to them that this is a relaxacon, but they countered that when they go to a convention, they want to attend scheduled events. For me, the best part of a convention is sitting around and talking with friends old and new.

MAILING COMMENTS

Der Mann von Druben: A fellow at work contracted a virus on his home IBM XT (pronounced "zit" around here) clone. I had a minor virus in my Amiga for a while, apparently contracted from a diskette a friend gave me. Said diskette contained a virus killer program! I have always backed up each file I want to keep on a separate diskette as soon as I am finished making alterations. Back up early and back up often! *

Crumbcrunchers: RAEBNC (Haven't used that in a long time)

Oblivious Left Turn: Concerning Christmas cards, I just skipped them entirely this year. Seemed like a good idea at the time. * See above for my own book news. * No, "Dog of Steel" could not sell. It seems - I dunno - kind of lifeless. Some of it is original, but the story also contains several hackneyed cliches from the genre. * Re. Yr. Cmmt. Crumbcrunchers: What little I have learned about chaos mathematics has helped answer several questions I used to have about the world, as well as confirm some of my beliefs. For instance, hot fusion has failed because of instabilities in the plasma. This indicates to me that fusion is a chaotic phenomenon, and inherently unstable. They need to learn how to use these instabilities to create hot spots where the fusion takes place. It also seems that sentience is inherently chaotic. If this is so, a working test for sentience could be developed by measuring the level of chaos in a brain (or computer). If it is above a certain value, the creature (for such it must now be considered) is probably sentient. Of course, there would be other tests to confirm this. *

Sideways 'Zine: Why was your passport invalid after Reagan "had a go with Libya?" * Another rave review of Ishercon. I may have to go again, some decade. *

Perambulating Parentheses: I'm afraid the drawings of the 4-D cream puffs were unclear. Or is it time for me to get new glasses? * Your office cubbyhole is better equipped than some apartments. * I have had teachers like that. One who stands out in my memory was charged with teaching Civil Engineers basic electrical and electronic theory. What he breezed through each class was anything but basic. Rumor had it that the college administration limited him on the number of students he could fail each year. This guy wasn't cruel, he just didn't realize that most of his students knew nothing about the subject. * My answer to "biological determinism?" "Under the most stringent conditions of environment and training, the organism does what it damn well pleases." * Too many teachers today train instead of teach. * Re. Yr. Cmmt. Greg: Note my comment above on the inherent chaotic nature of intelligent thought. It then follows that very intelligent people tend to be more chaotic in their thought patterns than "normal" folks. This leads to the interesting conclusion that until civilization developed, intelligence above a certain level was an anti-survival trait. *

Bombastic Title (Greg): I, too, have wished that sleep were optional. * A decade of APA-Tech! Can literature stand the strain? * NolaCon was not nearly as fouled-up as F/S 1. In that case, everything was well planned and running fine, then the guy in charge started making changes without consulting the people who had the experience. *

AstroTurks vs. the Weasel Rats

W. Skeffington Higgins

A contribution from the nearly forgotten W. Skeffington Higgins, 853 Lorlyn Drive, West Chicago, Illinois 60185. Phone: (312)293-1050. This is another Spinthairiscope Media publication, for Apa-Tech 64 (a round number!).

A Little More Than Minac, To Prove I'm Still Real

Jeepers, kids, I really owe you some mailing comments and some wonderful stories. I've been to some interesting places since I last wrote, including one of Cap'n Al's ships, the Johnson Space Center press room, and Rock Island, Illinois. But it's Crunch Time on the Space Development Conference, and I don't have time to do more than I've already done. (You do write the first paragraph of your zine after you've written the rest, don't you?) *PyroTechnics* has also soaked up a lot of spare time that might've been devoted to Apa-Tech, too. Hope you find the following good reading; maybe I'll see some of you at the O'Hare Hyatt on Memorial Day weekend. I won't write again until I've been to even more interesting places...

George! The Weasel Rats got me!!

George Ewing, one of GT's Foundering Fathers, talks about demonic creatures he calls the Weasel Rats. The Weasel Rats sneak into your brain while you're asleep and steal your ideas, which they then give to other writers.

In February, the Weasel Rats did a number on yours truly. Just two years ago, when Barry and I were invited to be fan guests of honor at Conquistador, I decided to put together a slideshow for the occasion. I wanted to investigate what happened to all those wonderful futuristic inventions we were promised by *Popular Science* and its ilk. So I dug up everything I could find on flying cars, and called the lecture "Doorman! Call Me an Aircar!"

It has been clear ever since that this would make a good magazine article, and that I had already done most of the research such an article would require. All I had to do was sit down and write it.

I put it off because I got busy with a lot of other things, such as Mars slideshows and Moonbase slideshows and national spacefreak conventions and reviv-

ing *PyroTechnics*, and because I felt that there was no great hurry. After all, who else could possibly think of doing a magazine article on aircars?

Well, the February issue of *Smithsonian* has an article called "Flying Cars Were a Dream That Never Got off the Ground," by James R. Chiles. It's a fine look at flying cars, and includes interviews with Molt Taylor and his buddy Jesse Minnick, who brought the Aerocar closer to success than any "roadable airplane" before or since. It's a good article.

Obviously the Weasel Rats sold my idea to Chiles.

And I have nobody to blame but myself for procrastinating. Now *Smithsonian* and its sister magazine, *Air and Space* (the best-paying markets for this sort of thing) won't want to publish a similar article for a long, long time. And any other ideas for articles I have, I'll really have to hustle for, instead of easily capitalizing on work I've already done. I'll get to work right after the Big Con is over. (Sure I will.)

Lost Futures

Speaking of aircars, I was intrigued by the plans Noreascon has for a "Yesterday's Tomorrows" sort of theme, as this has fascinated me for quite a while. In corresponding with them, I worked up some interesting lists.

Let me list some of the things *Popular Science* promised us over the years I was reading it, say 1958-1968. In parentheses I'll mention the status of each development. First, the ones we DIDN'T get:

- Aircars (many prototypes built, both roadable airplanes and VTOLs)
- Undersea cities (few experiments, no permanent habitations today(?))
- Moon bases (not even close)
- Passenger service to space (also a clean miss? What about Sen. Garn, John Denver, and that Japanese TV reporter?)
- Videophones (prototypes in semi-commercial service flopped, dta cmprssn might help a comeback)

- Hovercraft (Some in operation, not the major revolution expected)
- Broadcast power (Some tests, Solar Power Satellite or electric planes still in future)
- Nuclear flight (rockets extensively tested, \$1G airplane/ramjet development died about 1961, no zeppelins or helicopter)
- New tech housing—plastics, metals, domes, prefab? (Prefab homes and mobile homes made some inroads)
- Cars with autopilots (Not even close. DoD, robotics guys still have crude prototypes)
- 3-D television (Prototypes still pop up, and sometimes special glasses for broadcast programs)
- Death rays (Prototypes in labs now)
- Artificial Intelligence (whatever that is. Still active research; did we really expect to have computer pals by 1990?)
- Electric Cars (like hovercraft, they're around but still a novelty)
- Helicopter/VTOL airliners (exist, never became big commercially. So too downtown helipads, etc.)
- Space Stations (mixed reviews: Salyuts, Skylab, Mir, "Freedom," 1971-1998)
- 3-D movies (mid-1950s, still around occasionally)
- Supersonic airliners (On time, routine but very expensive)
- Really big airliners (on time)
- Extensive cable TV penetration (bit late?)
- "Flat" TV picture tubes (LCD displays expensive, small)
- Robots (Not much like we thought they'd be, still unknown in consumer's everyday life, capabilities coming only slowly)
- Compact disks and other digital media (a little early? CDs certainly took over very quickly, once they did appear!)

Surprise! What came out of left field, almost unpredicted:

- Civilian radar detectors
- Answering machines
- UPC scanners
- Home satellite dishes
- Home Shopping Network
- Colorized movies (Wait for three-dimensionalization!)

I'd be interested if you have any items I've left out of the three lists.

A decent book on this sort of thing is *Imagining Tomorrow*, edited by Joseph Corn, from MIT Press. It has chapters on plastics, nuclear energy, skyscraper cities, and the House of Tomorrow. Don't skip the one on the electric light as a communications medium.

Turks in Space, circa 1633

A recent issue of *Aerospace Historian* (Fall/September 1988) had "Birdmen of the Middle East: Early Attempts at Human Flight," by Gary Leiser, a USAF historian specializing in Islamic history. It's a review of flight legends in the Arabic world, and among other things it covers an incident not even whispered about in most Western books on the history of rocketry, space travel, or science fiction.

Now for the stuff we DID get, along with an estimate of whether it came on schedule or not:

- Plastics galore (on time)
- Nuclear subs, electricity (on time)
- CB radio (on time, I guess)
- Home computers (very capable much earlier than expected. Include graphics, BBS's, telecommuting, pirates, viruses, video games)
- Home videotaping (10 yrs late) (but hardly anybody makes his own programs! The Counterculture told me that the Sony reel-to-reel portable videotape deck and camera would put Video in the hands of the People. Instead VCRs are just furniture.)
- Radar ranges (20 yrs late)
- Irradiated foods (25 yrs late)
- Global communications (approx. on time)
- Men on the Moon (bit early)

Leiser quotes, and so will I, from a seventeenth-century account by Evilya Chelebi. This supposedly happened around 1633 in Istanbul. (Any Arabic speakers out there? Please pardon my slaughter of the transliterations!)

This Lagari Hasan had fabricated a seven-cylinder rocket using 50 okkas [about 64 kg] of gunpowder compound. When the Sultan was at Saray Point, he got on the rocket and his apprentices lit the fuse of the rocket. Saying, "My Sultan, I have recommended you to God. I am going to speak with the Prophet Jesus," and, praising and glorifying God, he made his ascent to the highest heaven...At the roof of the heavens, the powder of the great rocket was exhausted and when it descended toward the earth, he opened the eagle wings that he had in his hands and landed in the water in front of the mansion of Sinan Pasha. He swam from there and came naked to the Sultan. He kissed the ground and began to joke, saying. "My Sultan, the Prophet Jesus sends you his regards."

Leiser doesn't believe a word of this, but he says, "Evilya's account does show that the Turks had the ability to make large rockets, that some Turks had contemplated human flight by means of rockets as early as the seventeenth century, and that they may have even experimented with such a flight." I find it interesting that this account was written only a few years after Cyrano de Bergerac published his own account of rocket-powered spaceflight, in his *Voyage to the Moon*.

This issue also carried an article about the Army Air Corps/USAF attempts to control erupting volcanoes in Hawaii by bombing to divert lava flow. If Hilo is ever threatened again, F-15s will darken the skies; they really do have a war plan for this!

Aerospace Historian has just changed its name to *Air Power Historian*. It's \$50/year (first year for \$40 for new members) from

Maj. Gen. Ramsay D. Potts
Publisher
Air Force Historical Foundation
Building 1413, Room 120
Stop 44
Andrews AFB, MD 20331

Firsts

I recently had occasion to read some NASA press releases. Here's part of one by Sarah Keegan and Jeffrey Carr about Capt. Frederick Hauck, USN:

In November 1984, Hauck was STS-51A mission commander, the first space salvage mission in history. Hauck and crew retrieved and returned to Earth the Palapa B-2 and Westar VI communications satellites after deploying Anik D-2 and LEASAT-1 satellites.

Apollo 12 landed on the Moon near the old Surveyor 3 spacecraft, and Bean and Shepard removed a few parts for study on Earth. Doesn't this count as "the first space salvage mission?" I think if you try to deny it, you'll find yourself getting real fussy about the definition of "salvage."

I'm a little disturbed that the people writing NASA's press releases still emphasize "firsts" so often, despite all the criticism lobbed at such practices over the years.

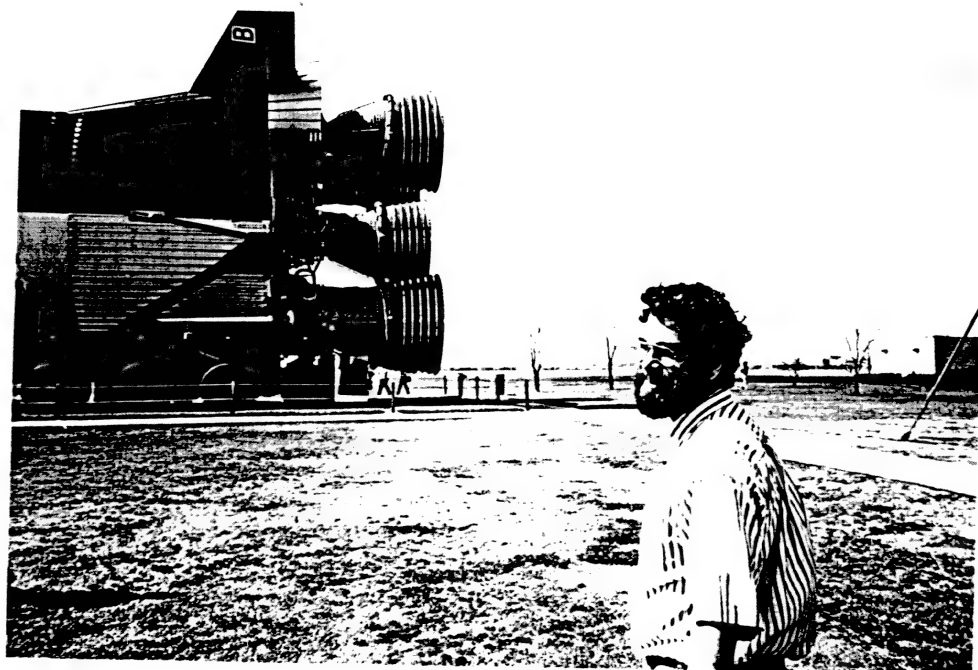
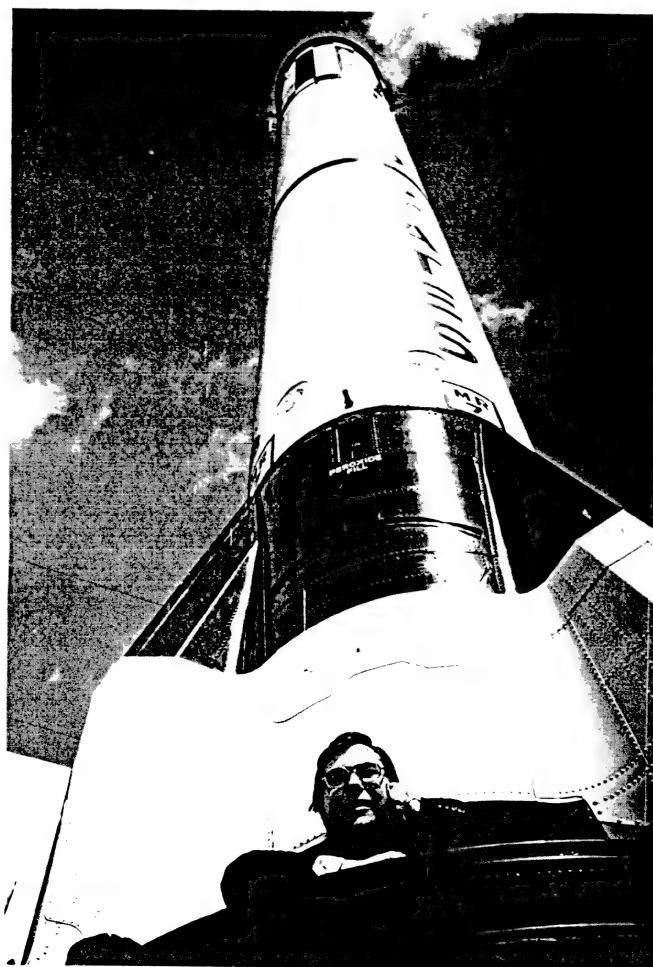
The 14 March release (by Charles Redmond and James Hartsfield) was even worse: "DISCOVERY'S RETURN-TO-FLIGHT PHOTOGRAPHS RECORD MANY FIRSTS...For the first time in Shuttle history, Africa's Niger river was photographed in full flood and out of its banks...for the first time, an aircraft was photographed generating a contrail..."

There's a basic dichotomy that Space Cadets suffer. Space flights should be Special Events, and we should drop everything else and watch them, and soak up every detail we can find, because we want to share in the great adventure. (Remember getting a TV in your classroom to watch Mercury and Gemini launches?) But space flights should be Routine Events, a part of everyday life, a casually accepted reminder that our race can get people and hardware into orbit any time it really wants to.

We love to hear about every detail of this stuff, but we also want our world to become a "spacefaring civilization," and in a spacefaring civilization one more launch or one more landing would be no big deal. Our press seems to have come down mostly on the side of No Big Deal, leaving us space freaks to scramble for information wherever we can get it. Reporters don't cover every moment of a transatlantic marine voyage. And if you hung out at the airport, interviewing pilots, crew, and mechanics about this afternoon's upcoming flight to Podunk, and asking them their opinion about the future of aviation (sometimes known as "the U.S. manned air program")—well, you'd be considered dotty at best. See the paradox?

I suppose we should be grateful for NASA Select video, and the computer nets, and the few magazines that do cater to the likes of us. And to those NASA publicists tirelessly searching for new "firsts."

Your
plucky
Narrator



Dr. Guy
Consolmagno,
ace astronomer
and formerly
Our Man
in Nairobi...



COLD FUSION (or how I learned to make the bomb)

by: Guy Wicker

By now everyone has probably heard about the experiment done by Pons and Fleischmann. In a beaker of heavy water (deuterium oxide) they placed a platinum wire coil, a palladium rod, and probably a little sodium hydroxide to make it a conductive liquid. With -12V applied to the palladium, the water electrolyzed and deuterium began to diffuse into the palladium electrode. Within hours, evidence of deuterium fusion reaction was obtained. They claim that with a 1 Watt electrical input they get 4 Watts out.

When I first heard this at Minicon I loudly denied the possibility it could work. I am quite familiar with what it takes to initiate nuclear fusion in deuterium (~100KeV) and with what kind of energies exist in a metallic crystal (~3eV). There is enough of a difference that the probability is infinitesimal (van Sicken of Idaho Falls says it is ten to the -75 fusions per second).

When I got back to ECD, as expected, Stan Ovshinsky was eager to get started on a cold fusion project. I was assigned the task of confirming the Utah results (or disproving them). I'll have the deuterium on Monday April 3.

Since Minicon, however, I've been having my doubts about whether this is true or not. First, Pons has an impeccable reputation as an electrochemist and, although this isn't electrochemistry, you'd think he'd check it out with some nuclear physicists before he announced. Second, the DOE has given him \$322,000 to continue his work and they certainly know a lot about nuclear fusion. Third, the results he reports do seem kind of weird and if he is actually observing those things it is quite strange. The only thing missing is some physical description of what might possibly be happening.

The first thing to do is look at the experiment he is actually doing and the results he is actually getting. Palladium is well known for its large lattice spacing which allows hydrogen to freely diffuse through it. In fact the density of hydrogen in palladium is much greater than it is in a pressurized cylinder of hydrogen. Hydrogen is commonly diffused through palladium in vacuum physics. It is also common to diffuse deuterium into a vacuum this way. There has never been a reported nuclear reaction from this and it is frequently done with neutron measurement apparatus. Although some Russian scientists did detect tritium by diffusing hydrogen into uranium.

One odd thing about the Utah experiment is that it takes 10 hours for the reaction to start. It shouldn't take that long for the deuterium to build up in the palladium.

Another thing they are doing that is odd is the use of a palladium rod. Electrochemists always use 1 cm foils of metal in their experimentation if they can help it. It could be that a critical mass of palladium is necessary to initiate the reaction. This thought led me to an idea for a possible mechanism.

In a metal crystal the atoms and spaces are formed into neat lines. This means that deuterium atoms are closely packed together in straight lines in the crystal. Fast neutrons are diffracted by dense crystals to move along the crystal axis. Any fast neutrons hitting the crystal may tend to travel along the same lines that the deuterium atoms are stacked along. If the neutron hits the deuterium atom it will send it shooting down this line with over a million electron volts of energy. The first deuterium atom it gets near at this speed will initiate fusion. This will create another neutron and may lead to a chain reaction. If this is the case then a "critical mass" of the material may be needed to get a reaction started. This might explain why they aren't using a palladium foil and why it hasn't been seen before. Palladium rods are expensive. This also might explain why it takes a while for the reaction to get going. A fast neutron initiator is needed and there aren't a lot of those flying around in a room. It may take hours for one to hit the crystal but after

that it would generate its own.

Assuming this is the mechanism then the bigger the metal crystal gets, the hotter it will get. Todd Johnson suggested a bomb idea by stacking lots of thin palladium foils full of deuterium and explosively bringing them together. It might work better than plutonium! But this is no cause to lose sleep tonight. It will be weeks before the terrorists figure all this out.

BERSERKER

There will be a berserker in Houghton again this summer July 22-30. Most people will be there for the weekend of July 28-30. It will be held at McLain Park again. Details will be given in the next issue of Pyrotechnics.

Has it really been that long?

A zine from Donna Proni - typed at 530 W. Walnut • Kalamazoo, MI 49007 (but hopefully printed courtesy of SSG LaserWorks and Alex). You can talk to me, my husband or my machine by calling (616) 342-4967.

March 16, 1989

Well, needless to say, it's been awhile...All things change, yet all remains the same...Back in 1979 Renée started this thing and kind of dragged me into it, too. Then she moved onto other things and I took her place...Back in 1987 Renée started getting involved in Neighborhood Watch and kind of dragged me into it, too. Now she's moved onto other things and I've sort of taken her place.

Pretty much that's what I've been doing for the past year and a half. I am now a director of our Neighborhood Association (on a board of 12), a Vice-Chairman of our Neighborhood Watch Steering Committee, a Co-Chairman of a sub-committee to organize our "Take a Bite Out of Crime Night" presentation (a crime and fire prevention fair with home security displays, mini presentations such as how to report a crime, and an entire room for kids which is the biggest amount of work), and a member of our Membership Committee. But none of this pays the bills. Tullio says that most people have their normal schedule, and fit in volunteer work around it, but that I have my volunteer work and fit the rest of my life around it (not quite true, but too close for comfort).

It's really quite rewarding in some ways. It's kind of a weird feeling to see that you can really make a difference. In terms of crime in our neighborhood, Neighborhood Watch helped to reduce it 40% in two years. Kalamazoo has an

unusual program with Neighborhood Liaison Officers. We have one Officer assigned full time to our neighborhood. His name is Larry Start, (some of you have met him at Ishercon) and he's a great guy and he's become a good friend of ours. His job is what his title implies - he acts as a liaison between the neighborhood and the Department of Public Safety. (That's another unusual thing Kalamazoo has - we don't have a Police Dept. and a Fire Dept., we have Public Safety which means that most of our Police Officers are also Fire Fighters. There are only enough people in the Fire Station to drive the trucks - when there's a fire, they leave from the station with the trucks, and the Public Safety Officers meet them at the fire in their cruisers.) He helps us to promote Neighborhood Watch and plan educational crime prevention presentations to put on for the benefit of the residents. We work hard at changing people's negative perceptions about our neighborhood. We've also worked very hard at getting the Public Safety Officers who work in our neighborhood to see that we care which will hopefully make them care. In that at least, we seem to have made progress. Larry says that when he first started this job three years ago, all the Officers said he was wasting his time - only junkies and criminals lived in Vine. Now they tell him he's got the cushiest job - that Vine's so organized and energetic that we do all his work for him (not true - we are organized and energetic, but that means we do a lot of different things, most of which he's involved in and working on).

Some of the rewards are tangible too. (I have to blow my own horn, since there's no one else here to do it) - tomorrow I'm going to the Pontiac Silverdome to accept an award from the Crime Prevention Association of Michigan. Larry nominated me, and I was chosen as the Crime Prevention Volunteer of the year for the state.

But enough about me. Considering how long it's been since I've written, I can't possibly cover mailing comments completely, but I do want to make a few token comments.

Guy C.: Tullio and I went on a weekend "retreat" as part of our preparation before we got married. I really didn't think we'd be able to leave all of our everyday problems at home, but we did. It was wonderful! They have retreats for married couples as well, and I expect to be looking into that sometime later this year. It's nice to really Get Away From It All, if only once every five years.

Gabe and Audrey: You're right - I was and am suffering from editor burn-out. I didn't want Apa-Tech to die (I still listed the next deadline). I just wanted to pull out the lifeline that was attached to (and draining) me, and see if it still kept breathing. I've always had a hard time being involved in more than one major project - when I do something, I jump in with both feet and do it wholeheartedly. It just got to the point that the volunteer work I do in my neighborhood was bringing me considerably more satisfaction (and yes, egoboo) than putting out Apa-Tech was. Also, when I write, I write what I feel - some

days I felt more despairing of the survival of this apa than others, and I guess I wrote of its impending demise on one of those days.

Barry: Do I count as part of "your" generation(I never could figure out what makes a generation)? I haven't heard "Don't Worry Be Happy" either (and it won a Grammy!?) - and from all the take-offs I **have** heard, I don't want to. /// I haven't written in so long that I don't know if I ever said this (here at least) and even though it's really old news by now, just for the written record - congratulations Dr. Gehm.

Linda: I did peek ahead, but just to be sure that your news was what I thought it was. I'm not sure how much more often we'll see you, but you know we always have a spot for you here (definitely floor space, but for you - probably even a bed). So how **did** they test for sexual deviation?

Greg: Sorry it took me so long to get you all the accounts and the money for this thing. Thanks for being patient. Thanks also for taking on the total editorship - I'll try to write more often (I'd hate to be dropped now - I have a whole set (minus a few postmailings) of this Apa). Good luck in this and all you do.

Well, it's not much - but if I want to get this in at all I'd better stop now and send this off.

Take care, and hopefully I'll be reading and writing again soon.

- Donna

CUT DOWN BY
SHRAPNEL FROM
THE INFORMATION EXPLOSION

("I don't have time to learn anything --
I'm too busy reading!!")

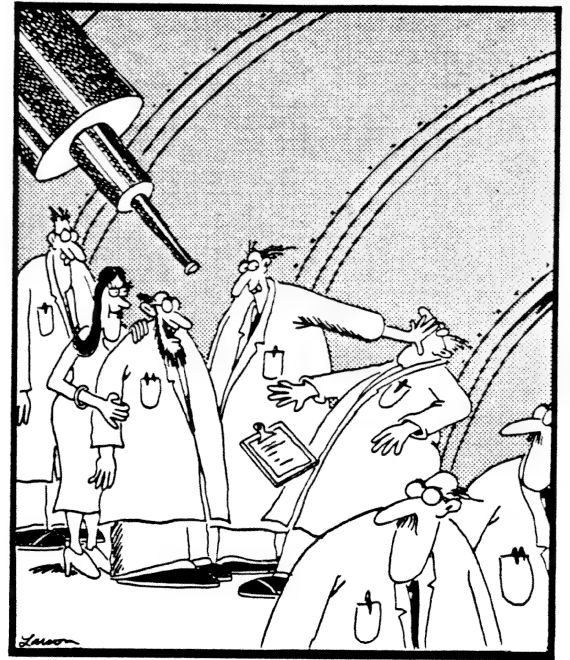
Gregory Ruffa
1004 Seventh St., S.E., Apt. 103,
Minneapolis, Minn. 55414
(612)-379-9622

* * *

Yoicks! No time left to type this out -- it's already pretty late! Spring showed up just about on schedule, with the temperature shooting up about twenty degrees or so and melting over a foot of snow in about a week (nice for us, not so good for some folks downriver...). It's been up into the seventies at times (there were days when it was warmer here than in southern California), but it has now gone back to being rainy or damp and in the fifties (just like the springs I remember in New Jersey or Boston).

I may finally be getting the hang of this grad student biz. Things could be going better, but I think I'll pull through. I had to drop a course last quarter when I got more and more lost -- I hadn't looked at electromagnetism in ten years -- and back up one sequence to try learning things I supposedly already know. So this quarter, I'm taking cosmology (laced with particle physics), stellar astrophysics, and "E&M." The "stellar" course is a bit peculiar: the guy who's teaching it taught the introductory course last fall, which is sort of unprecedented -- the two are not generally taught in the same year or by the same person. So, last quarter, he was casting about for things to talk about this time. Helpful me: I gave him a list of a dozen topics that would be of contemporary interest. When the course began, he announced his solution to the problem: the students would each give a ninety-minute lecture and he would give the rest. (It could have been worse -- he could have made us choose from my list!)

So now I'm busy reading to pull together an hour-and-a-half talk on supernovae. There are two kinds of such blow-ups. In one case, a star of, say, fifteen times the Sun's mass or more squeezes all the energy it can out of the nuclei in its fusion core; when that runs out, there is no more power



All day long, a tough gang of astrophysicists would monopolize the telescope and intimidate the other researchers.

available to hold the structure of the star above the core up against gravity. The weight of the rest of the star falling down onto the core crushes the matter inside in a way that forces processes at the subnuclear level to take place. The core re-establishes itself, now as a neutron star (sort of like an atomic nucleus ten miles across), and the shock wave from this transformation and "bounce" tears the star apart. The supernova reaches a peak power output billions of times that of the Sun (our telescopes can pick out explosions half a billion light-years away); for all that, something like 99.9% of the energy from the explosion comes out as neutrinos - only some of the remainder is the light that we see. In the other type of supernova, a white dwarf (the abandoned core of a dead star, that once was maybe a few times the Sun's mass, and stone-cold by thermonuclear standards) accumulates gas blown off from a companion star orbiting about it. The surface gravity of the white dwarf is around a hundred thousand times that of Earth; eventually enough gas accumulates and is compressed in this gravity field to undergo fusion, which, under the right circumstances, it does violently. Again there is a peak power output billions of times greater than the Sun's. I'm boiling this down a good bit - I'll be talking about the physics of these explosions and the kinds of chemical elements they make on May 16th.

I finally caught up with the guy I'm supposed to be assisting on research. I'll be looking at various statistical measures of the way in which galaxies cluster together. Ultimately, this will be in aid of comparing theories of how galaxies originated and congregated with the actual spatial arrangement that we observe. I now have an account on a SUN Workstation network, which communicates with, among other facilities, the Crays at the Minnesota Supercomputer Institute. This means that I supposedly now have an electronic-mail address, so, once I learned how to use electronic mail, I will list my "location."
(Looks like more computer manual reading ahead - I also have to learn to use UNIX...)

I'm off to Washington for the AIAA Annual Meeting and the meeting of the Space Sciences and Astronomy Technical Committee. I will be helping to organize sessions for the Aerospace Sciences Meeting in Reno in January. I'll have to pass up the Space Development Conference in Chicago over Memorial Day weekend - it's the last week for us before finals :eep:. Right after the quarter, I leave for the American Astronomical Society meeting in Ann Arbor and on to New Jersey for a visit with my folks, so I'll be out of here for a couple weeks. Take care and don't forget the APA's Tenth Anniversary next issue!

MAILING COMMENTS

To Dr. Guy:

The following item appeared in the "New and Recent Titles in Astronomy" catalog from Cambridge University Press.

Congratulations!

(Glad they finally figured out how to reproduce the line drawings...)

psst: How about a review copy for Pyrotechnics?

Turn Left at Orion

One Hundred Night Sky Objects to See in a Small Telescope—and How to Find Them

Guy Joseph Consolmagno, Lafayette College

Daniel Michael Davis, State University of New York at Stony Brook

Turn Left at Orion is a guidebook for beginning amateur astronomers using a small telescope. The moon, the planets and 100 deep sky objects visible in the northern hemisphere are shown as they appear in a small, 50–75mm (2"–3") telescope. The book provides detailed instructions on how to find these and other objects in the night sky, and what to look for once you have found them. A brief summary of the current state of astronomical knowledge about each object is included.

This is the first guidebook specifically designed for small telescopes. The emphasis is on observing for fun. The instructions assume no previous knowledge of astronomy, ensuring that people of all ages and backgrounds will be able to enjoy this helpful book. Objects are located in terms of easily visible nearby stars, rather than the more complicated celestial coordinates. The large-format drawings depict exactly what the observer should expect to see. The book is designed to be used at the telescope with clarity and ease, even outdoors at night.

1989 224 pp. 5 halftones/over 100 line diagrams

34090-X Hardcover List: \$19.95+

Discount: \$15.96+

Overdue Acknowledgements

I wish to thank Higgins Deluxe Fermilab Tours, Inc. and the Nuclear Arms Hostelry (in no way associated with the better-known, but less popular, nuclear arms hostility) for covering the cost of my Windycen membership; it's been a while since I've played the Impoverished Student...

The strange pulp-novel-looking illustrations at the beginnings of my previous two contributions were lifted from the works of the British cartoonist Glen Baxter. Look for his books wherever obscurer humor is purveyed. (Of course, I doctored the captions a mite...)

APA-TECH 62

(concluded)

Me It is with regrets that I mention that Paul Erdős "left" last year, within a year of the appearance of the article in The Atlantic Monthly. It is my sincere wish that he gets to see The Book.

APA-TECH 63

Cover It might be an even better "pick-up line" (or maybe just gilding the lily) to work in "high-temperature superconducting" or "cold-fusion-inducing"; you can still fill up an auditorium around here with phrases like those. (I heard about a talk given in L.A. on "superconducting optical neurocomputers"; my ears are still ringing from all the buzz words...)

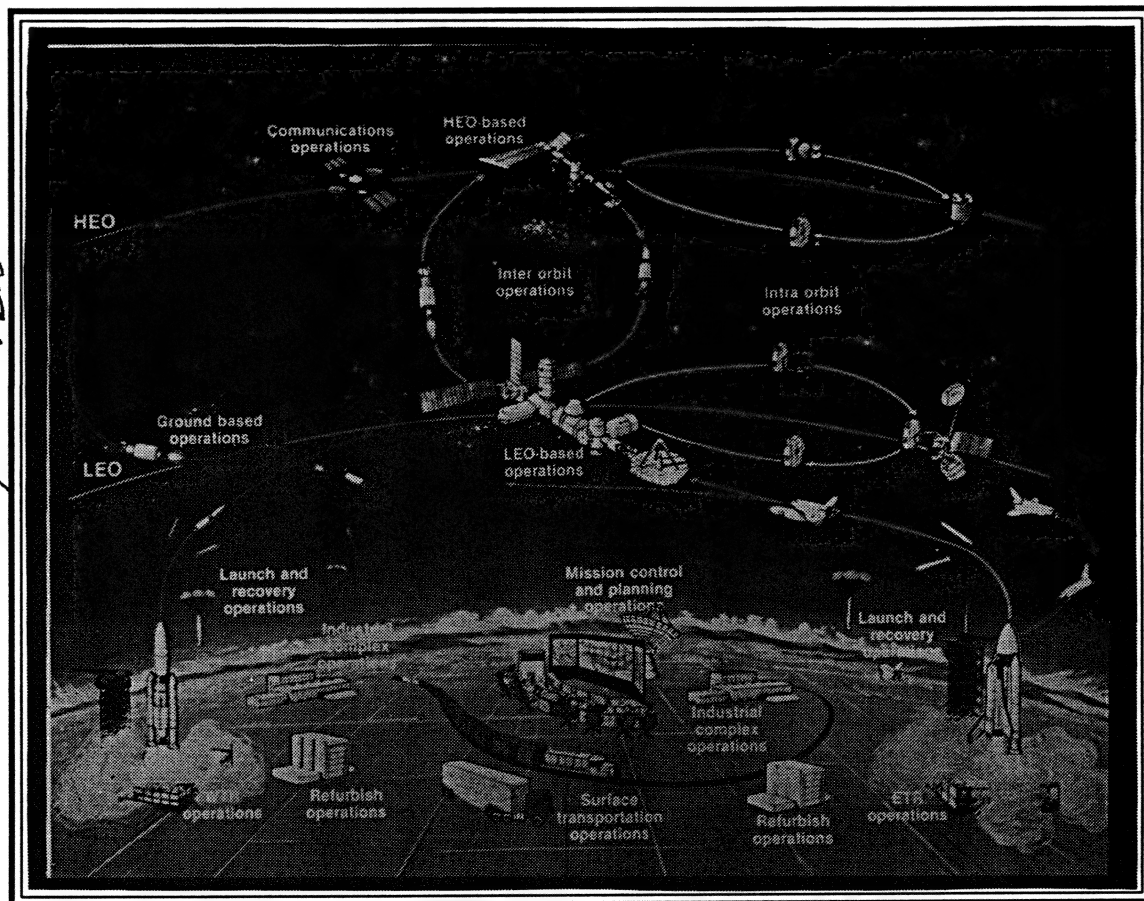
Joa The potential of exposure to viruses has still got me cowed: I've still avoided buying a modem or public domain diskettes. I have about as much respect for virus hackers as I do for people who poison reservoirs...

Susannah Congratulations and best of luck to Dave, now that graduation is approaching!
Isn't there a danger, in bringing kids' toys to Ishercon, that the techies will start playing with them?
The small press (and independent record label) activity is quite remarkable and more than a bit daunting. I've seen an entire (small) room in City Lights Bookstore in San Francisco devoted solely to independent press poetry and literature. There is a lot of excellent amateur and professional-quality art out there which is utterly ignored by the mainstream publishers... I couldn't begin to guess how big "micropress" is, but extrapolating from the listings in the (now-defunct?) journal South of the Moon, there are probably hundreds of APAs and thousands of fanzines alone, and correspondingly many among numerous other fields of interest.

* * *

It's getting really late. I'll have to pick up from here next go-around. I include with this 'zine more news of research fun back at GD (sent in by friend and former co-worker Bob Happersett), another wacko conference notice, and an item from a recent New York Times that certainly reflects the sentiments of many of us here...

I'm looking forward to hearing from you all soon!



Artist's rendering of the principle elements of the future space transportation infrastructure including launch vehicles, transfer vehicles and orbital support vehicles.

Space Transportation Infrastructure Study (STIS)

How long should NASA continue to fly the Space Shuttle, and what should be the next manned launch system to replace the shuttle? How should NASA's Space Station be designed so it can accommodate space based vehicles capable of carrying personnel and supplies to the Moon and Mars? When should nuclear propulsion systems be developed to facilitate human exploration of the Moon and Mars?

Critical space Transportation issues as diverse as these will be addressed by Space Systems Division in an important new study awarded to us in February by NASA's Marshall Space Flight Center. The purpose of this \$5.5 million, three-year "Infrastructure Study" will be to identify the future space transportation systems needed to augment today's Space Shuttle and expendable launch vehicles, and to determine what new technologies are needed to make

these systems possible.

Since the Infrastructure Study will touch upon virtually all existing and future space transportation systems, competition for this single-source contract was intense. Space Systems was the sole contractor selected from a field of nine competitors, which included such formidable adversaries as Boeing, Martin Marietta, McDonnell Douglas, and United Technologies.

"This important win provides us with the opportunity to become an integral part of NASA's planning process and to identify requirements that will influence the evolution of nearly all of our products," said Dr. Alan M. Lovelace, Vice President and Space Systems General Manager. Space Systems' approach to the study is to examine four families of vehicles and how they relate to a variety of future

Greg- I thought you might be interested in this. Alis is still going strong, but the constant re-direction is really wearing at me. I hope you & Cordell did some good work for STAS. They guys will probably be copying everything you did! your friend, Bob

space mission scenarios. These transportation element families are:

1) **Launch Vehicles.** The study will look 20-30 years in the future -- beyond the life expectancy of today's Space Shuttle and expendable rockets -- to consider what technologies and launch vehicles will be needed. The study will also explore a number of nearer term issues, such as the need for liquid rocket boosters to enhance Shuttle safety and reliability, trade-offs between the Advanced Launch System (ALS) and the unmanned Shuttle-C, and the feasibility of developing a small "Personnel Launch System" at low cost and with minimal risk.

2) **Space Transfer Vehicles.** These are vehicles that will operate in space, free of Earth's atmosphere, to move objects from one orbit to another or between orbiting platforms. The study will examine the role of Space Systems' Centaur as a candidate for this mission. Because transfer vehicles operate outside of Earth's atmosphere, the technology requirements are more concerned with efficiency rather than power. Thus, the study will look at what is needed in lightweight materials, advanced engine and propellants and aerobraking. An area of particular interest is whether nuclear propulsion will be required to reduce propellant requirements for staging of a manned mission to Mars.

3) **Transportation Nodes.** The Space Station Freedom, now scheduled to become operational in 1996, has been viewed largely as a research lab. As other facilities are put into orbits around the Earth and Moon, the Space Station may become more of a staging base, where space based transfer vehicles can be stored, refueled, and mated with their payloads. A key trade study Space Systems will perform over the next few months is to determine whether transfer vehicles and their propellants can be safely maintained at a permanently manned facility, or whether certain transfer vehicle operations should be carried out on an unmanned platform. For example, cryogenic propellants can be stored at a separate, co-orbiting depot located a safe distance from the space station.

4) **Landers and Return Vehicles.** These include the vehicles that return to Earth like the Shuttle Orbiter as well as the vehicles that will land on the Moon or other planets. Since very little work has been done in this area since the last Apollo Lunar landing, defining landers capable of descending to the surfaces of the Moon and Mars will be particularly challenging.

During this study, Space Systems will assemble and evaluate a large number of infrastructures comprised of transportation elements in these four families. In addition to evaluating the thousands of different combinations of these transportation elements that are possible, we will have to assess several different mission models. At the start of the study, we will evaluate infrastructures designed to accommodate a "core" set of missions, limited to activity within Earth's vicinity. But as the study progresses, we will have to identify infrastructures capable of supporting much more advanced missions, including human exploration of the Moon and Mars.

To help perform these analyses, Space Systems is

investing hundreds of thousands of dollars to develop an "Infrastructure Analysis Network" that will combine user-friendly PC-based data bases with a sophisticated optimization model called the "Transportation Architecture Program." This network will also link our San Diego plant with our Huntsville engineering office and the Marshall Space Flight Center. Eventually, several other NASA centers may tap into this network as well, providing much of the space agency with instant access to our data bases and analytical models.

The Infrastructure Study will be unique in several respects. To accomplish the study objectives, GDSS will have to exchange data with several dozen parallel studies and hardware development programs. NASA has established an internal steering group, with representatives from several centers, to help facilitate this data exchange. Another unique feature of the Infrastructure Study will be the use of "technical directives" to accomplish a majority of the work to be performed. As the study progresses, NASA will issue these directives, allocating funds for the examination of topics that are determined to be important as the infrastructure analyses produce results.

The leader of the proposal team that brought this contract to GDSS was Mike Simon, who will be the program manager. Simon, who recently turned 30, has noted that the median age of the proposal team was 27. Nine of the eleven core members of the proposal team are involved with the study. According to Simon, "NASA is enthusiastic about working with a younger group of engineers to accomplish this effort." One of the veterans is deputy program manager John Maloney, who has worked in the aerospace industry for over 35 years. Another seasoned expert who made major contributions to this win is Bob Drowns, who developed the first version of the Transportation Architecture Program for GD in 1963.

Simon estimated that the decisions on where American space policy is headed may not be made until the last year or two of the new president's administration. Were it not for the ability to share data and feedback information to all participants in the study and other contractors, the study results could be quickly out of date in a dynamic world. The study allows for changes in direction.

Key engineering disciplines that are represented on the GDSS Infrastructure Study team include Operations Analysis, Advanced Concepts and Design, Systems Engineering, and Economic Analysis.

Security Issues

*By Mike Flannigan
Security Administrator*

As a major provider of launch vehicles for the United States Government, Space Systems Division has a unique responsibility to our nation. Our country's future exploration of space and our national security is dependent upon our commitment to building quality products and achieving a 100% successful launch rate. The Division's ability to continue its excellent relationship with the government is dependent upon many factors. One factor which is extremely important is our responsibility to protect the classi-

LUNAR COMMERCE CONFERENCE

3rd Space Enterprise Conference

Registration Information

Registration Fee

\$495 (hotel room not included)

Special Early Registration Fee

\$395 (Before 31 July 1989)

Name _____

Company/Title _____

Address _____

City/State/Country _____

Zip _____ Phone _____

☐ \$495 Registration Fee

☐ \$395 Special Early Registration Fee

(Please send check or money order payable to
Space Age Publishing Company in U.S. currency)

For more information contact:

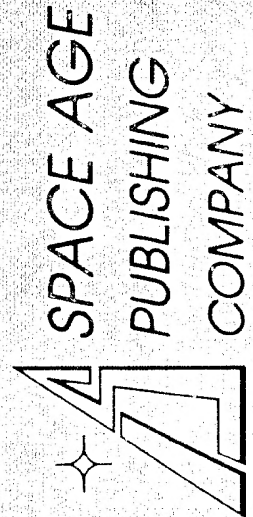
Space Age Publishing Company

20431 Stevens Creek Blvd.

Cupertino, CA 95014

Ph: 408-996-9210

Fax: 996-2125



Twenty five years ago, a commitment was made and then fulfilled. The commitment was complex and enormously courageous -- to visit the Moon. And one day, to stay. Space Age Publishing Company has as its avowed purpose to promote not only the exploration but the commercialization of space.

Our nearby neighbor is ready not only for our visitation, but our habitation.

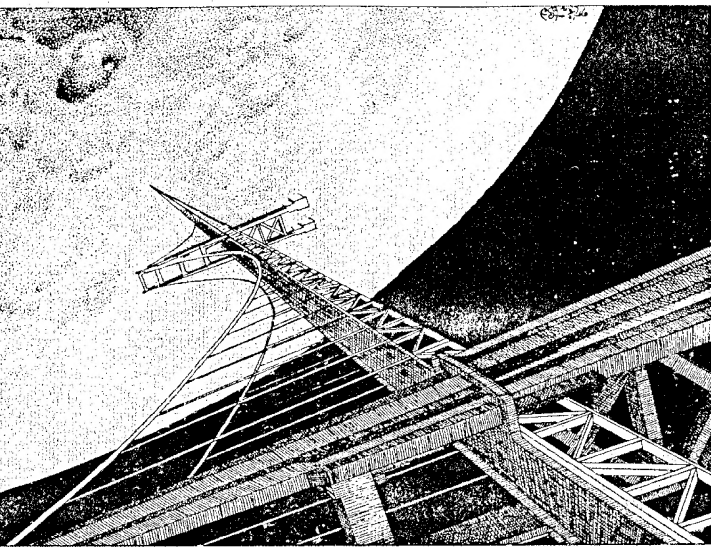
The commercial strategies, the blueprints for transportation and settlement are in place. Space Age Publishing Company wants to ensure that all the work completed to date, especially in the areas of lunar habitat development, lunar transportation, the building of financial systems, and education of the public about lunar issues, comes to fruition. The only way to do that is to bring together the people who are making the plans and working to make the plans a reality. You are one of those people. Don't miss this opportunity to continue work on the Earth-Moon Bridge.

SPACE AGE PUBLISHING COMPANY

Space Age Publishing Company covers the activities of civil, commercial, and scientific space enterprises. It publishes **Space Daily**, a space industry newsletter, and **Space Calendar**, a national/global weekly publication from its Hawaii branch office, and also sponsors annual Space Enterprise Conferences.

LUNAR COMMERCE CONFERENCE

Building the Earth-Moon Bridge



3rd Space Enterprise Conference
1-3 October 1989

San Francisco, California

sponsored by

Space Age Publishing Company

BUILDING THE EARTH-MOON BRIDGE MEANS BUILDING A COMMERCIAL REALITY ON EARTH'S ONLY SATELLITE

It means exploring forseen, but unrealized commercial opportunities there. It means learning new ways to reach the Moon, understanding new economic strategies to build the bridge and stay there.

For the purposes of this conference, it means coming together to discuss those strategies, to hear the most recent research, theories, and plans centered on lunar development.

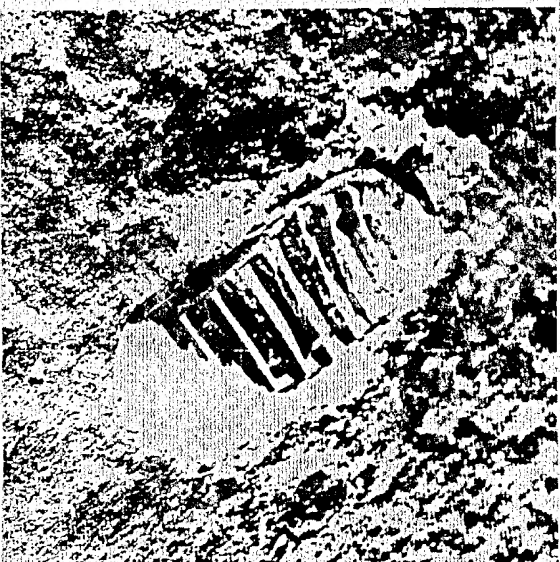
This Third Space Enterprise Conference sponsored by Space Age Publishing Company will bring together some of the foremost thinkers and doers in the development of lunar commercial opportunities.

The conference has a three-part focus -- building lunar transportation systems, developing an economic basis on Earth to finance lunar commercial ventures, and promoting more public awareness of lunar commerce. Presentations will provide participants with two full days intensive exposure to entrepreneurs and other experts geared to financing a lunar journey and sustaining a lunar habitat.

A secondary aim of the conference is to create a relaxed atmosphere in which a collegial gathering of like-minded entrepreneurs can occur. Participants will have ample time in the course of the two-day, single-track schedule to interact with and question presenters.

Conferees will arrive in San Francisco International Airport the afternoon of October 1, take a free shuttle bus to the nearby Embassy Suites Hotel, register, and following a cocktail hour and meeting with colleagues, will attend a banquet highlighted by a keynote presentation.

Monday and Tuesday, October 2 and 3 sessions will be moderated by a noted lunar commercial expert. Former Apollo and shuttle astronauts, conceptualizers and builders will be present to do more than merely dream - rather to plan a coming commercial reality on the Moon. Afternoon sessions of each day's proceedings will feature panel discussions.



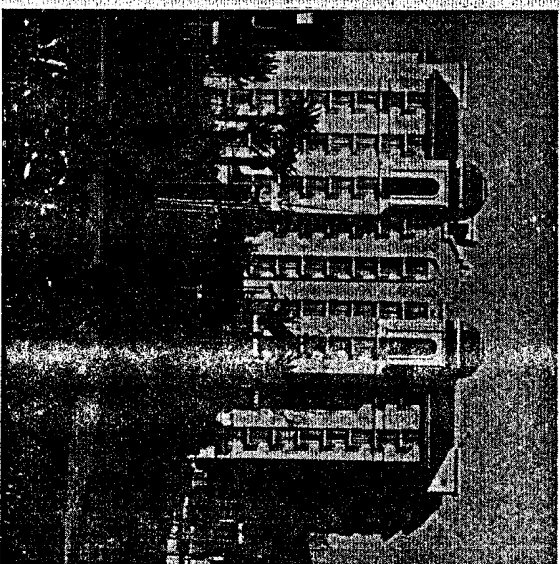
NOTED EXPERTS IN LUNAR COMMERCE WILL TALK ABOUT:

- creating incentives for lunar ventures through real-estate development.
- how entrepreneurs are forging common understandings of a lunar commercial future.
- the latest in plans to service and maintain a lunar transport system.
- the latest in electromagnetic launchers, superconductivity and robotic probe technology, and lunar transport.
- economic strategies for making a Moon base, and an Earth-Moon bridge a reality.
- establishing a lunar infrastructure -- politics, law, and international cooperation.
- capital ventures to promote travel to the Moon, and capital ventures to establish on the Moon's surface.
- educating the general public on the importance of establishing a Moon base.
- how a credit/financial base on the moon will operate.
- preserving the ecology of the Moon once we're there.
- construction techniques, homesteading, farming, and bioculture on the Moon.
- warehousing water and other materials on the Moon.

CONFERENCE SITE:

The beautiful, distinctive and comfortable Embassy Suites Hotel, with its individual suites for each conference participant and its lush surroundings, sits on the edge of San Francisco Bay in Burlingame just south of San Francisco International Airport, only twenty minutes away from the inimitable sights, sounds, and food of San Francisco, and only 30 minutes from the Silicon Valley. A free 24-hour shuttle service from the airport to the hotel is available to all conference participants.

The Embassy Suites special room rate for conference participants is \$89 per suite, either single or double. Each suite is luxuriously appointed. There is also a free cocktail hour each evening, and a free full breakfast each morning for all guests in the hotel. An Embassy Suites registration card is enclosed for your convenience. To reserve your suite, please fill out the card with the requested information, and return it to the hotel.



In addition to the opening banquet, Space Age Publishing Company will provide free to participants luncheons on Monday and Tuesday, October 2nd and 3rd. Monday night is open to participants' individual plans.

Burn the Buildings, Hang the Professors

PROFSCAM

Professors and the Demise of Higher Education.

By Charles J. Sykes.

304 pp. Washington: Regnery Gateway. \$18.95.

By Roger Kimball

It is difficult for most of us outside academia to work up much sympathy for university professors. They complain about being underpaid, and, despite the growing number of \$100,000-plus superstars, many of them undoubtedly are. But how much work do they do? A professor who teaches two classes a semester — a typical teaching load at most good colleges and universities these days — need not spend more than four or five hours a week actually teaching. There is preparation time, of course, and grading papers and examinations (assuming that teaching assistants do not discharge those onerous tasks) and maybe even a required office hour or two. But still: four or five hours a week teaching — that is what sticks in the mind.

And when one remembers that professors have summers plus all school vacations free, that they are typically eligible for a sabbatical at full pay every seven years, that tenure guarantees them employment — well, it all begins to seem pretty cushy. Indeed, when one thinks about the dismal state of higher education, about the many 18-year-olds who do not know who Winston Churchill was or what happened in 1914, for example, then the situation seems worse than cushy. Especially when set against fees that are often more than \$18,000 a year, it begins to seem, as Charles J. Sykes puts it in his engaging and polemical overview of the contemporary university, like something of a scam.

Mr. Sykes, a journalist in Milwaukee and the son of a professor (to whom the book is affectionately dedicated), has no doubts about the cause of the current academic debacle. The "real villain," he writes in his introductory chapter, "The Indictment," is "the American university professor." In his view, if higher education is in trouble in this country, the blame lies not with

Roger Kimball regularly contributes to *The New Criterion* and other publications. He is completing a book on the humanities and higher education.

students or university administrators but with a lazy, self-absorbed, pretentious and often corrupt professoriate that has largely abandoned the classroom. At times, Mr. Sykes almost makes it seem like a conspiracy: "The professors — working steadily and systematically — have destroyed the university as a center of learning and have desolated higher education, which no longer is higher or much of an education."

In his attempt to make good on this indictment, Mr. Sykes begins with a brief sketch of the development of contemporary academic culture and its proudest brainchild, the modern academic specialist. He chronicles the gradual transformation of the university from an institution concerned chiefly with teaching to what Clark Kerr, a former president of the University of

Modern "multiversities," mammoth research institutions, do everything but teach students.

California, gleefully dubbed the "multiversity," the mammoth, lavishly funded research institution that, according to Mr. Sykes, is concerned with everything but teaching the tens of thousands that supposedly form its raison d'être.

While he also discusses such transgressions as fraud and scholarly incompetence, it is in fact what he calls "the flight from teaching" (or even the "rape" or "crucifixion" of teaching) that forms the center of Mr. Sykes' argument with the university. Notwithstanding abundant lip service to the contrary, teaching plays little role in decisions on promotion in our major universities, and so it naturally tends to be slighted by aspiring academics. Citing several cases where professors who received awards for distinguished teaching had been passed over for tenure, Mr. Sykes insists that the contemporary "academic culture is not merely indifferent to teaching, it is actively hostile to it."

Supporting anecdotes are as familiar as they are horrifying: ill-prepared, inaccessible professors, so-called "mass classes" of 1,000 or more students (a predictable result of ever-diminishing teaching loads, as Mr. Sykes points out), teaching assistants who cannot speak understandable English, and on and on.

"Profscam" supplies ample evidence of these and other academic follies. Drawing on testimony from universities across the country, Mr. Sykes samples everything from the hermetic and overtly politicized cant pouring out of our humanities departments to the pseudoscientific humbug populating those wonderfully oxymoronic academic inventions, the social "sciences." What can be done to improve things? Mr. Sykes is as straightforward in his prescriptions for reform as he is in setting forth his indictment: abolish tenure, require professors to teach, restore the traditional curriculum and relieve the unwarranted pressure on young academics to publish.

To most outsiders, this may seem like an eminently reasonable list of proposals. But I suspect that most academics will regard it — especially the prospect of life without tenure — as little better than H. L. Menckens' suggestion that the real way to reform our universities would be to burn the buildings and hang the professors.

MR. SYKES' vivid and occasionally eloquent exposé is sure to provoke howls of indignant rage in the academy. Yes, he tends to paint with a broad brush and sometimes engages in dramatic overstatement; and yes, we all know professors who are exceptions to his disturbing portrait, men and women who really are teachers, genuinely concerned with their students and generous with their time and energy. But it is part of Mr. Sykes' purpose to show that such teachers are an endangered species in today's academic culture. And at bottom, as his analysis shows, what is at stake in the dereliction of the professoriate is nothing less than the traditional idea of liberal arts education. One wishes that Mr. Sykes had devoted more detailed attention to the essentially political motives that stand behind so many depredations in the academy today, especially in the humanities and social sciences. But as a report from the front, "Profscam" is an incisive and convincing indictment that deserves to be read by anyone concerned about the future of American higher education. □